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ABSTRACT

This document consists of four papers presented at a symposium on contextual learning issues moderated by John Henschke at the 1996 conference of the Academy of Human Resource Development (AHRD). "Self-Directed Learning in Organizations: An Analysis of Policies and Practices of Seven Resource Companies in Western Canada" (H. K. Morris Baskett) describes a comparison of 9 of Foucher's (1995) 32 propositions about self-directed learning in the workplace against the human resource policies and practices of oil and gas companies. Results indicate the autonomy of learners is highly modified by the organizational context. "Designing the Learning Potential of Jobs" (Jeroen Onstenk) presents the model of the learning potential of jobs. It discusses conditions and characteristics of task groups as an effective strategy to enhance learning possibilities of job content and work environment of production workers. "Neighbor-Teaching-Neighbor: A Case Study of the Reciprocal Relationship between Work and the Worker" (Diane B. Stoy) reports that a study of five black women working as peer teachers in their public housing communities showed that working in this new work role gave them tangible skills, a positive identity, and improved self respect. "The 'Outcomes' Challenge: An Action Learning/Critical Thinking Approach to Program Development and Evaluation" (Susan Damme, Rod Hamer) describes an approach to the redesign of organizational work around program outcomes that combines practice, reflection, and the development of new theory. Each paper contains references. (YLB)

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SYMPOSIUM
[20] CONTEXTUAL LEARNING ISSUES

Chair: John Henschke, University of Missouri

Self-directed Learning in Organizations: Analysis of Policies and Practices of Seven Resource Companies in Western Canada
H.K. Morris Baskett, University of Calgary

Designing the Learning Potential of Jobs
Jeroen Onstenk, University of Amsterdam

Neighbor-Teaching-Neighbor: A Case Study of the Reciprocal Relationship between Work and the Worker
Diane B. Stoy, University of St. Thomas

The "Outcomes" Challenge: An Action Learning/Critical Thinking Approach to Program Development and Evaluation
Susan Damme, University of Minnesota
Rod Hamer, University of Minnesota

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Self-directed Learning in Organizations: An Analysis of Policies and Practices of Seven Resource Companies in Western Canada

H.K. Morris Baskett
The University of Calgary

Nine of Foucher's 32 propositions about self-directed learning in the workplace are examined against the human resource policies and practices of 7 Western Canadian oil and gas companies with over 1000 employees.

Current wisdom, sustained by organizational observers, researchers and writers, posits that knowledge is the most significant resource of the post-industrial organization, and learning is its most important tool(Senge, 1990; Mink, Esterhuysen, Mink and Owen, 1993; Watkins and Marsick, 1993).

Mink et. al(1993) observe that "In a true 'learning organization', everyone is encouraged to learn whenever necessary to improve a process, a product or a service"(p. 9). Workers who are continuously learning and developing are said to be the backbone of the competitive, effective organization of today(Watkins and Marsick, 1993, p. 25-29; Pedler, Burgoyne and Boydell, 1994, p. 4).

One of the hallmarks of learning organizations is the ability and freedom of employees to learn what they need to learn to do the job effectively. To some degree, this involves autonomy in selecting the content, means, time and location of the learning activity. This paper examines the results of a study of resource-based organizations in a Western Canadian city and examines the degree to which nine of the propositions about self-directed learning(SDL) developed by Foucher(1995), are upheld or contradicted by the data.

Methodology

Human resource development vice-presidents or senior HRD personnel of seven resource-based organizations employing between 1000 and 5600 people were interviewed. Each were interviewed about the organization's policies and practices relating to SDL. The sample was selected from a list of 14 oil and gas companies operating in Calgary, Alberta, Canada, which had over 500 employees. The study is part of a larger on-going investigation into SDL in the workplace by The Group for Interdisciplinary Research in Autonomy and Training(GIRAT).

A 39-page interview guide was used. This guide was developed by Foucher(1995), and was translated from French to English in 1993. The French version has been pre-tested in Quebec, and used to investigate over 30 enterprises. It was designed to test 32 propositions about SDL in the workplace developed by Foucher(1995).

The seven interviews using the English version were each of approximately three hours duration and involved two interviewers. The interview questions covered general organizational information, structure of the HRD system, formal organization, general data on training and self-directed learning, and links between worker learning and other human resource management activities.

In this paper, the research question addressed is: To what degree are Foucher's(1995) propositions about SDL in the workplace supported, modified or disproved by the data?

The Propositions

Foucher(1995) developed 32 propositions about self-directed learning in the workplace. These propositions relate to three dimensions of learning self-directedness: initiative; autonomy and planning. The propositions were initially developed from a literature review and a series of focus groups with

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human resource professionals, and subsequently submitted to a panel of ten experts specializing in training-related issues in the workplace(Foucher, 1995, p. 294).

This paper examines the degree to which the data gathered from the 7 organizations support, modify or refute nine of those propositions. Each proposition will be identified, and the relevant data will then be introduced.

Propositions One, Ten and Twenty-one. Three propositions relate to the control over content of emplyee's learning. Foucher's first proposition states

> The more the knowledge to be acquired by the learner is specific to the organization, the more the organization will tend to take the initiative for designing(or having someone design) and carrying out(or having someone carry out) learning activities tailored to its own specifications(Foucher, 1995, p. 302).

Proposition ten states that

> In times of budgetary restrictions, management tends to conserve initiative for those training activities that it considers critical. For less crucial training activities, it will depend more than at other times on employees' initiative(Foucher, 1995, p. 305).

Proposition twenty-one declares that

> Where an organization's management team considers important that a large number of employees acquire knowledge of a similar nature, learning activities will tend to be more planned.

There was considerable evidence to support these propositions. All of the companies had either begun, or were in the process of implementing planned change when the oil and gas recession of the late 1980's hit. Process re-engineering, strategic planning, and in some cases, especially at the plant level, variations of continuous improvement were being implemented.

The economic shortfall of the recession riveted attention on means to economize and enhance productivity. Five of the seven organizations put in place some kind of core competency program which was required of management, and sometimes, of all employees. These were variously labelled, managed and delivered. All were characterized by a set of specified courses, taught by contractors, or "cascaded" by internal personnel, to ensure that each targeted category of staff had the essential skills and competencies deemed necessary to ensure employees were more aligned with the organization's mission and to ensure "business results". Most contained skills in business writing, understanding the mission/vision of the organization, how to interpret the organization's financial systems, computer literacy, communication, and decision-making. In cases where teams had become prominent as a result of restructuring and process re-engineering, training in team functioning was highly visible.

At the same time, "superfluous" programs, usually related to "soft skills", were cut.

While individual discretion in regards to the pacing, location and time of learning existed in some cases, control over the content of these core competencies was not an option for the employees. The content was usually fixed by a team appointed by senior management. Delivery was most often managed by the HRD function in the organization. Sometimes, surveys or focus groups were used to establish this content, and even to get input on the instructional approach, but in the end, the content was fixed, and all targeted employees were expected to master the content and skills prescribed. Usually the method was prescribed as well. In-house offerings were made on a scheduled basis, and employees were expected to "make up" those areas which they had not "taken", or in some cases, to obtain them through external programs.

Proposition Two. Foucher proposes that

> The more homogeneous the acquired knowledge needs to be, the more the organization will tend to exert control by taking the initiative for designing(or having someone design) and carrying out(or have someone carry out) learning activities tailored to its own specifications(Foucher, 1995, p. 302).

The evidence cited above would also appear to confirm the basic intention of this proposition. Each organization seemed clear that employees required understanding of their organization's unique operations, vision, and goals. These could not usually be purchased "off the shelf", and each either used internal staff to develop the training, or contracted externally for consultants to develop such programs in consultation with the organization's appointed representatives.

On the other hand, some "canned" programs were purchased, and our informants referred to these. These tended to be the more generic skills such a communication, team functioning, or leadership. Nonetheless, these courses were mandated for employees, and in two cases, a system to ensure that each member of the targeted population received the necessary training was mentioned.

Propositions Four and Thirteen relate to the issue of specialized and complex knowledge. Foucher's proposition four states that

> The more complex and specialized the tasks carried out by employees, the more the organization will benefit from employees taking the initiative for designing(or having someone design) and carrying out(or having someone carry out) the learning activities(Foucher, 1995, p. 303).

Proposition thirteen also relates to task complexity and specialization:

> The more complex the tasks performed, and the more they vary from one workstation to the next, the more employees will be in a position to make choices about their learning goals and the content of the learning activities(Foucher, 1995, p. 307).

The energy industry tends to be dominated by professionals and scientists. Six of the seven companies were Canadian head offices which contained the major head office functions of exploration, research, transmission, product development, refining, finance, marketing and human resources. Field and plant functions, such as drilling or refining operations, were located elsewhere, sometimes in other countries.

Several of the interviewees spoke of how much of the learning of the professionals, and especially those who were in research and development, was self-directed. All of the seven companies employed many specialists whose job it was to discover gas and oil and to develop and market petroleum-related products. Computer specialists, geologists, chemists, engineers and geophysicists were especially involved in these settings. For example, 70% of the staff of one of the smaller companies examined held one degree, and 20 % held two or more degrees. Although this kind of data was not collected on all companies, this profile would be typical.

These professionals and scientists were probably some of the "purest" knowledge workers to be found. They were involved in applying knowledge to complex problems where known procedures and knowledge may not be helpful, or where judgement and unique applications of this knowledge was demanded. Our informants reported that these professionals learned through attendance at professional conferences, through reading, discussion with other colleagues and through working on problems. Knowledge was their mainstay, and they were often creating this knowledge as they went.

Equally important, these professionals worked in sub-cultures in which discovery and new ways of thinking were supported and valued, sometimes in research laboratories or field trials. They guard their freedom to discover and learn independently(Kilcoyne and Volpe, 1991).

The available data from this study cannot confirm or disconfirm whether or not the organization will benefit from employees taking the initiative for their own training, nor whether the organizations prompt employees to do so, as stated in proposition four above.

Support is found, however, for proposition thirteen, in which complex knowledge which is unique to those professionals is more likely to be gained through independent means, rather than through organizationally-imposed learning activities.

Proposition Five. The data generally support Foucher's fifth proposition:

> In organizations where management has difficulty assessing training needs, either because of low span of control or the presence of highly individualized tasks, employees will be encouraged to take initiative for their own learning. They will be

> asked to select appropriate activities, and in some cases, to carry out these activities(Foucher, 1995, p. 303).

Much of the work of these professionals requires informal learning through reading, problem-solving, and discussions with colleagues, which by nature involves a higher degree of learner control over timing, pace, location, content and learning methods.

Whether or not the organizational culture supports and values self-directedness, the complex and specialized knowledge required to complete their tasks makes it difficult for supervisors and senior management to judge what, when, or why knowledge is needed. By default, this often leaves the professional in control of the required learning activities.

The intentionality implied in this proposition (`employees will be encouraged to take initiative' and `they will be asked to select appropriate training activities') is less evident. It would seem that self-directedness often "comes with the turf" of being a professional, and management may have limited control over some aspects of professional learning.

On the other hand, management does control the common core business learning activities of these professionals such as computer literacy and financial awareness/management, as indicated under propositions one, ten and twenty-one.

Proposition Six. This proposition states:

> In organizations that support learning, and where the organizational culture is favorable to training efforts, employees will be expected to take more initiatives towards their own training than in comparable organizations where learning is given a lower profile(Foucher, 1995, p. 305).

Only one of the companies had formally committed itself to becoming a "learning organization", and this effort was spearheaded and fully supported by the CEO. Preparations for organizational transformation were just beginning at the time of the interview. It was clear, however, that while it was anticipated that employees of this organization would be expected to take responsibility for their own learning, even in this case, a considerable number of mandatory training events were planned. Selected managers were being trained to provide core skills deemed necessary by the organization to become a learning organization. Thus, even in a learning organization, one can expect that employees will have limited choice of learning activities, given that much of the initial energy will be directed at the core competencies.

Proposition Fifteen. Foucher states

> The more importance an organization ascribes to the knowledge acquired by employees(for security reasons, or out of concern for quality, for example), the less employees are likely to be given a choice as to what learning goals to pursue, or to what activities to undertake(Foucher, 1995, pp. 307-308).

The findings reported under propositions one, ten and twenty-one would also tend to support this proposition. Other data also support this proposition. All companies reported that they were obligated by law to train certain employees according to various government regulations including fire procedures, hazardous materials handling, and employee health and safety procedures. All seven companies had union contracts which set conditions for training of union members, although the number of union contracts varied considerably between companies.

Viewed from the perspective of employee autonomy in learning, it becomes apparent that legal and contractual arrangements mediate this autonomy especially in terms of content, but often in terms of learning method.

Conclusions.

It becomes apparent, based on these 7 cases, that the autonomy of learners in the workplace is highly modified by the organizational context. In many cases, this is to be expected, inasmuch as by definition, organizations are collectives to achieve specific goals. However, given the amount of control which

organizations seem to exert on the learning agendas of their workers, one might question the validity of the conventional wisdom that worker self-directedness is either possible, or even appropriate. Furthermore, one needs to question whether the concept of self-directedness, arising from ideological roots and embraced by some adult educators, is an appropriate model for examining workplace learning. On the other hand, if there turns out to be a relationship between employee creativity, productivity, and autonomy, then it would appear that these companies' policies and practices may be actually inhibiting their competitive edge.

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Michael Chechanech was Research Assistant for this project. He acted as co-interviewer, and wrote the cases based on the audio recordings and completed interview questionnaires.

Readers are invited to respond to the contents of this paper. Contact Dr. H. K. Morris Baskett, Faculty of Continuing Education, The University of Calgary, 2500 University Drive n.W., Calgary, Alberta, Canada. T2N 1N4. Telephone: 403-220-4714. Fax: 403-284-9242. E-Mail: 591554 @ UCDASVM1.ADMIN.UCALGARY.CA

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Designing the Learning Potential of Jobs

Jeroen Onstenk
University of Amsterdam

Learning at work requires that the workplace fulfills certain conditions in order to qualify as a strong learning environment. In the paper the model of the learning potential of jobs is presented. Conditions and characteristics of task groups as an effective strategy to enhance learning possibilities of job content and work environment of production workers are discussed.

The learning potential refers to the likelihood of learning processes occurring in a particular job situation (Baitsch & Frei, 1980). Learning processes and the development of competence depend on specific combinations of characteristics of workers and of work. Workers skills and qualifications (formal education, work experience, learning skills), their ability and willingness for self-directed learning and for developing competence determine the way they see and use learning opportunities on the job. The occurrence of learning possibilities depends 1) on characteristics of the job and the working environment (complexity and variation of tasks, cooperation, control, autonomy) and 2) on the amount of organized training on-the-job. In this paper emphasis is laid on the first dimension.

Learning possibilities on the job can be promoted by redesigning jobs contents and making jobs more complete and complex. By including innovative tasks 'learning events' can occur at the job, which ask for (collective) problem solving, planning and discretion space. The work environment as a second major field of learning opportunities can also be developed. Colleagues and supervisors giving feedback and explanations, information sources, including computers, available at the job and material clues can foster learning and adaptation to (and of!) the task.

Autonomous task groups are becoming more and more the basic unit of production, rather than the individual worker (De Sitter, 1990). They seem to open up promising roads to learning at work both on the level of the job and on the level of work environment, as was revealed in a recent literature search on good practices with regard to on-the-job learning in six industrial countries (Onstenk, 1994; 1995a). Empirical references in this paper are taken from this research.

The Learning Potential of Jobs

OJL requires that the workplace fulfills certain conditions in order to qualify as a strong learning environment (Onstenk, 1994, 1995a, 1995b). Adopting and developing the terminology of Baitsch and Frei (1980), these can be analyzed in terms of the learning potential of jobs (see fig. 1). The learning potential refers to the likelihood that learning processes will occur in a particular job situation. This likelihood depends on 1) the available skills and learning abilities of the employee; 2) the willingness to learn of the employee; 3) the learning opportunities on the job and the 4) availability of training on-the-job, including 5) relationships and mutual influences of these factors. Learning processes and the development of competence, result from the specific combination of the workers skills and qualifications (formal education, work experience, learning skills), their ability and willingness to learn and develop competence and the learning possibilities on the shop-floor (tasks, cooperation, control, autonomy, training policies, organizational change etc.).

The model of the learning potential is both a descriptive and a conditional model. As a descriptive model it states the influence of characteristics of the different dimensions on the likelihood of learning. This depends both on the dimensions itself as on their interrelationship and interaction. Learning occurs in an interaction between employees and the opportunities for learning presented by the job, mediated by skills and receptiveness to

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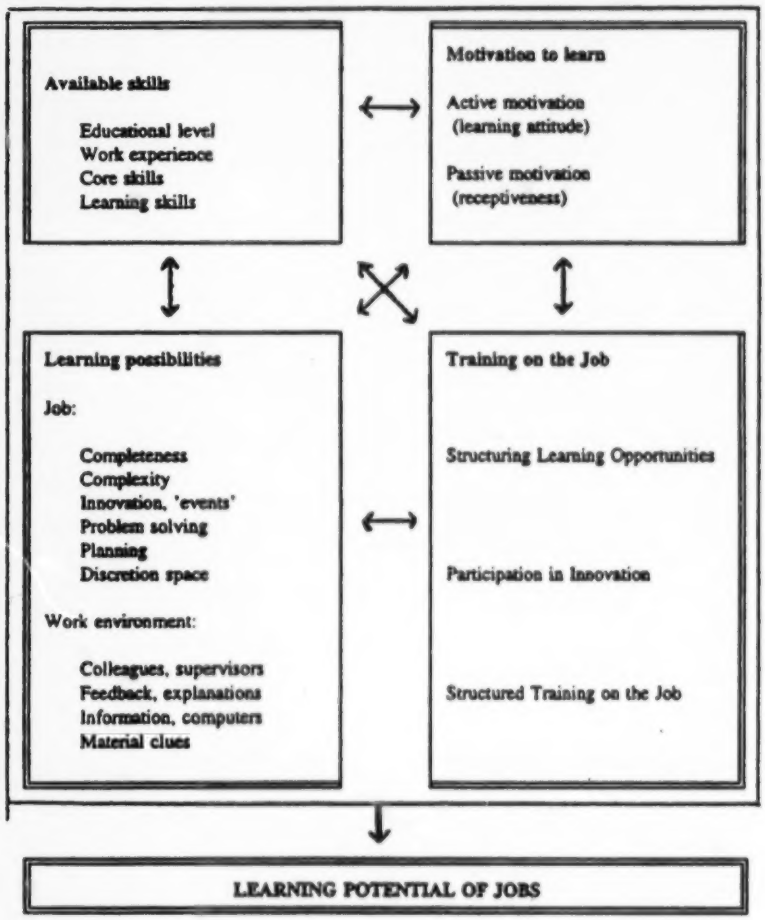
learning of employees. Learning opportunities on the job can be subdivided into the characteristics of the job and the working environment itself as an element of the learning process (OJL) and training on-the-job.

Figure 1 The learning potential of jobs



(Source: Onstenk, 1994, 1995a)

Learning Possibilities Learning possibilities depend on characteristics of 1) the job content and 2) the work environment. With regard to the *job content* (scope and variation), the amount of problems to solve and the autonomy to deal with these problems are essential. Jobs differ greatly in content and variation. A company has a lot of organizational choice in this respect: the same kind of job can be designed in different ways, allowing for more or less learning opportunities. Learning possibilities can be enlarged by putting people in different posts in the production process, enabling them to broaden the range of skills, which can be themselves still rather narrow (multi-skilling). Much more effective and consequential is a redesign of jobs whereby complete jobs are created: jobs which include preparing, executing, controlling and steering tasks (Projectgroep WEBA, 1989). This enlarges greatly the chance that people in their job meet on a regularly - and recognized ! (compare Kusterer, 1976) - basis new situations, problems and 'events' (Zarifian, 1991), in which they can learn about new methods, technologies or products. Work problems become learning problems, when existing solutions are not effective and new ones do not yet exits (completely). Encountering serious work problems, developing interest to solve it and having the opportunity to reflect on it are strong incentives to learning (Engeström, 1994). The only way to learn by solving problems is to actually have enough autonomy, means

and support to be able to solve the problem. An organization must stimulate and accept searching for answers, including the possibility to make mistakes. Employees should be allowed to experiment and take the relevant decisions. The organization must guarantee the conditions for this. Employees must have so much influence on order, tempo, methods and task variation which is needed in order to solve the problems they have to solve meet in the job. If problems cannot be solved alone, it must be possible to look for support by colleagues or support staff (Projectgroep WEBA, 1989). If these conditions are not met encountering a problem does not result in learning but in stress (Karasek and Theorell, 1990).

Job environment Also the job environment can be more or less inducing to learning. Several dimensions can be distinguished: physical characteristics; the availability of information; the amount of collective and mutual learning. Learning strategies used on the job are specific and situation-bound. They are determined by the attempt to handle the job with minimal efforts and maximum results. Available information and clues, given by social and physical work environment, are actively used. Warehouse employees carry out in high speed complicated orders by making use of standardized sizes and numbers in packages and of dimensions of stacks of stock. If complicated arithmetic skills like these are measured with academic, school oriented tests, they score very low (Scribner, 1984; 1986). Another example is the importance of sensory perceptions in processing industries. When jobs are informatized the labor process becomes more abstract and less physical characteristics are observable. Modern warehouse employees are not able to see the actual stacks from behind the screen. But design and soft ware can take a need for recognition into account. Also informatization makes available a lot of visualized and systematized information, job aids and simulations in many jobs. These are primarily designed for solving production problems, but can be used very well for the support of learning (Verdonck, 1995; Raizen, 1991).

The most important dimension of the job context as learning environment connects closely to the problem richness of the job and refers to learning of and with others. Social clues for learning/problem solving are given by experienced colleagues, experts and supervisors. Collective problem solving, giving and taking support and feedback, but also telling work related stories, are strongly favoring learning (Raizen, 1989). Experienced colleagues and supportive supervisors must be there and they must be accessible. Mutual learning can be organized in quality circles or weekly work meetings, where employees and supervisors discuss daily work problems, aiming at improving performance and solving problems. But also a lot of learning is done in informal talk during coffee breaks. Research shows how repair mechanics of copier machines solve problems by discussing with clients and by telling 'war stories' in which specific machines and customers are discussed (Raizen, 1989). In this way participating in the community of practice (Lave and Wenger, 1991) is essential in developing competencies. Employees learn and 'teach' together solving complex, specific and situated problems. This is especially important because of the fact that the manual of the machines, produced by the company in many cases was not of much help. The amount of communication is not only important for the support of problem solving, but also for the development of giving meaning to working life and to develop the commitment which has gained such a high esteem in the learning organization. If critical-reflective learning is expected of employees the work environment needs to listen to and to make use of the proposals.

Training on the Job On-the-job-training (OJT), organized by the firm constitutes the second important opportunity for employees to learn in the workplace. It can be defined as intentional, structured and organized OJL. In theory, all dimensions of learning possibilities identified above, could be applied to OJT too. But in OJT learning is an explicit objective (for employee and company) and, to varying degrees, the organization, structure and management are geared to learning and there is an educational strategy underlying it. OJT can be regarded as a kind of continuum, reaching from a minimal educational intervention unto structured training. OJT concerns all those activities which are explicitly aimed at training employees by supporting, structuring and monitoring their learning. It is not always possible or meaningful to draw a strict dividing line between provisions for learning and

training in the workplace. The distinction between implicit and explicit learning is a question of degree. There is a continuum which ranges from learning in the workplace by OJT to off-the-job training. Training in the workplace includes characteristics of learning in the workplace, as well as characteristics of a training course. A distinction can be made between three main forms of OJT (Onstenk, 1994, 1995a):

1) the structuring of learning opportunities in the workplace (getting to know the job, job rotation);
2) participation in innovation and quality circles
3) structured training in the workplace (structured OJT).

OJT concerns a specifically organized activity, or series of activities, which is characterized by a planned structure, explicitly formulated learning goals to be achieved, a form of evaluation and a clear demarcation in terms of time. It ranges from minimal educational intervention to in-depth structuring. OJT may vary from giving an employee a particular job with a view to learning to structured training and explicit learning in places of work which are designed as a (multimedia) learning environment.

OJT is seen here as a dimension in the learning potential of jobs. From this perspective the focal point of attention is not the development of a specific training course (and using the work place to deliver it), but the use of organizational and pedagogical-didactical means to promote training embedded in on going learning processes on the job.

Learning as Interplay of Employee and Work Situation Much discussion on learning, training and HRD concentrates on organizing specific learning events. The model of the learning potential of jobs offers another perspective. we are not interested primarily in designing a course which happens to be delivered on the job, but we want to 1) stress the fact that any learning at the workplace is in fact part of a chain of planned and unplanned learning events. We also want 2) to concentrate on optimizing learning opportunities at the actual job. .

The concept of the learning potential differs from other definitions which concentrate either on job characteristics (Karasek and Theorell, 1990) or, more psychological, on the ability of individuals to learn. The model proposed here emphasizes the learning situation as a learner in a specific learning/working environment. Both dimension are important. Not any job offers the same amount of learning opportunities to every worker at any moment. This is not to deny that one job can have more or less learning opportunities than another, on the contrary, it is one of the aims of this exercise to pea for designing jobs which are richer in learning opportunities. On the other hand one employee is able and willing to learn more than another. But that should be no reason to make learning abilities the most important screening point or to expect improving learning in the organization (only) by enhancing willingness to learn.

The model proposes possibilities to enhance learning by aiming at the different dimensions. Measures and projects to foster learning should focus directly on shaping and changing the subjective (employees' willingness and ability to self- and work-directed learning) and objective (supply of learning opportunities; factors which either promote or impede learning) dimensions of learning potential, in order to qualify the workplace as a strong learning environment. Innovation of the organization and the labor process should be geared towards the learning potential of jobs. This includes broader jobs with learning opportunities; fine tuning of steering necessities (solving production problems) and steering opportunities (both in terms of autonomy and qualification); work environment inductive to learning (small work groups); strengthening training and teaching roles of managers and key workers. These however are only effective when they indeed 'trigger' learning activities either directly by posing challenges as indirect by stimulating employees to learn.

It is impossible to establish simple correlations between the particular features of a job, the learning processes and the intended learning effects, although obvious connections can be made. Learning opportunities are particularly dependent on the content and complexity of the work and on the extent to which the person is free to operate and take decisions autonomously and the scope for social contact. Situated and immanent learning processes may be reinforced by providing support and feedback, by emphasizing reflection and allowing room for personal experimentation and problem-solving, including the opportunity to make mistakes.

It should be stressed however that every job triggers learning, although not all learning will lead to desired results. A job with few opportunities to develop competence can have very powerful learning effects leading to learned helplessness (Leyman & Kornbluh, 1989). But also unskilled jobs can offer opportunities for learning although they demand no recognized skills. A lot of working knowledge (Kusterer, 1976) is demanded in order to keep production processes rolling. Recognition of prior learning and practical competence acquired in this way is very important when embarking on a training or learning trajectory with regard to new production concepts. Every learning intervention is intervening in an ongoing process of learning and sense making.

Learning in Work Teams

Redesign of work in order to improve competitiveness is on the agenda in a growing number of firms. Flexibility, Just-in-time and quality care are among the most important topics here. In new or transformed production concepts jobs become broader and multi-dimensional, decision making and latitude amplify, social contacts are becoming more extensive. Also the need to deal with information and information processing devices at the workplace (computers) is growing. As both complexity and work pressure are growing demands on skills and commitment of workers are rising. Change has become the norm in many work sites. So a need to continuous possibilities of acquiring skills are needed. Training can help, but can not do the job. Employees need learning possibilities during work. As follows from the model of the learning potential new production concepts offer major chances to improve learning possibilities on the job. This holds, albeit in different forms and qualities, both for sociotechnical and 'lean production' models. Design principles can be analyzed on the level of the individual job. In many cases however it seems more fruitful to analyze these changes at the level of the department or work group. It is typical for the new model that the (semi)-autonomous work group is made a central principle of organizational and at the same time as an important learning strategy. The taylorist model leads to a complex organization with simple and isolated jobs, steered by managers and planning specialists. The new model entails a relatively simple organizational structure, with complex and more complete jobs. Learning on the job entails multi-skilling, the level and quality of which depends from the content of the newly designed job itself and from the possibilities for situated learning offered by the social work environment (colleagues and supervisors). Introducing work groups as a leading organizational principle has several objectives, not necessarily reinforcing each other.

Primary Goals Although work groups are discussed here with regard to the work place as learning environment, it is important to stress that the first and most important objective in introducing small work groups is the productive function. The work group must open up opportunities for organizing the labor process more flexible, by integrating tasks and by making employees multi-usable so switching of tasks becomes easier. Production problems - which become harder to predict and larger in consequences because of smaller batch sizes, fast renewal of technology and products and the strive for continuous improvement - can be better solved when and where they occur. Employees need - and have opportunities to acquire - a broader view on the production process and on the place of their own work in the whole of the system. Also more opportunities are offered for discussing problems and mutual support in solving them.

Another important function of the small work group is work planning at the level of the work process itself. Employees can be put to work flexibly so absenteeism can be dealt with much easier. Sudden changes in product specifications can be dealt with, just like last minute orders. In this way decentralized planning as is made possible by modern information technology can be used to the maximum.

A second objective for introducing small work groups has to do with enhancing motivation and commitment. Small work groups are introduced in order to improve the quality of labor and to lower absenteeism. This objective has been especially important in the older attempts to introduce work groups. It is dominant in the USA. The small work group is supposed to solve motivational problems. Job enlargement and enrichment is not

so much aiming at improving the work process but at stimulating motivation, responsibility and self esteem of employees. In a later stage the group is also used to improve production. Working in small groups or quality circles is supposed to strengthen group cultures in the company. This form of organization in small groups is important in enhancing learning processes leading to socialization and developing social-communicative skills.

Small Work Teams as Learning Strategy A last objective, which is becoming more important recently, entails using small work groups as an explicit learning strategy. Roughly a distinction can be made between the small work group as strategy for improving individual competencies of employees and as a strategy for the strengthening of the organization (the concept of the learning organization). The small work group as a strategy for development of competencies is aiming at promoting learning of employees by job rotation and task enrichment, by collectively solving problems and by enlarging steering opportunities on the shopfloor and by the intensifying of mutual learning processes. The organizational principle of the small work group can also be geared primarily to process improvement, as is the case in the quality circle Japanese style. The most important objective of group activity is making proposals for improvement, for avoiding process problems and for the identification and elimination of 'superfluous' movements and actions. In this case there is not so much working together in a groups, as well as discussing problems in separate group meetings (in Japan often in free time). Occurring production problems, but also simple techniques for quality control (i.e. statistical methods) are discussed. Intensification of the working day and the elimination of learning opportunities in the work itself can be a result of this.

The small work group enlarges the learning potential by enlarging learning opportunities in the job. These may result from enlargement or enrichment of the job. In many cases in introducing small work groups the job is not only broadened by learning to perform more tasks, i.e. by rotation to the work posts within the group. Also enrichment takes place by the integration of simple repair and quality control tasks in the job. In order to make possible solving problems at the spot both the necessity to make steering decision and the authority to do so at group level is enlarged.

In production functions job rotation is (re)discovered as a learning route for multi-skilled expertise. By rotation over the different work posts within the small work group this routes can be organized well. In a period of some months or years a combination of introductory training and a period of practice in the job can be repeated several times, for new jobs within the small work group or production line. This system is not yet diffused widely, although there is a steady growth. Several examples can be traced in which a well paced training trajectory and differentiated work levels are neatly connected and where every employee can learn by doing at his or her own level.

Small work groups also enlarge the learning potential by reinforcement of collective learning processes in the group. Employees cooperate more and more closely, exchange information or discuss planning of work, work problems and opportunities for improvement. This is true both for autonomous work groups (the Swedish model) as for the lean production group (the Japanese model). An important aspect is the structural enhancement of opportunities for mutual learning. Employees learn each other the tricks of their work post in the process. Problems are mutually discussed. An important learning effect can result from collectively discussing problems and improvement proposals by experienced workers form different departments and professionals (designers and planners). In designing small work groups this dimension can be explicitly be regarded by combining employees with different qualifications (content and level) in the work group. This is of special importance when integrating tasks form different areas (i.e. integrating mechanical maintenance and repair in the work of electrical engineers or operators).

Another important learning possibility is the establishment of representative responsibility. In many groups there is a post of group representative, which can be formally described (as in the Japanese style work groups) but which also can be rotating, as in the more autonomous work groups. In this kind of tasks social-communicative as well as planning skills can be developed and also insights in the whole of the production process can be attained. This of course implies that pay-systems and personnel ranking systems are tailored to this kind of responsibilities, which in many case the are not.

Probably the most important contribution for the learning potential of the small work group is the enlargement of the opportunities for the making decisions and for solving occurring problems in the own job. Characteristic for the small work group is the collective planning of the work and the solving of problems. The need and the latitude for employees to take decisions are enlarged, in which the collective competence of the group can be used and developed. Work meetings or quality circles can play an important role in this respect.

Problems and Risks The small work group as learning strategy is probably best instrumented in Germany and Sweden, although mainly as model projects. It is less clear to which extent model-projects influence actual changes of companies at large scale. The establishment of experience-led work structures and installation of small work groups is connected to the design of models for initial and adult vocational training (Weiterbildung), but with little connection to the actual work. The learning isle often remains an isle in the production process itself. There is a lot of experience with designing new models, in which quality of labor and quality improvement of the process are mutually reinforcing, but the real problem seems to be the implementation on a larger scale. The learning organization seems not to learn that much from the neighboring firm, although especially the Swedish programmes pay attention to this aspect in emphasizing regional exchange projects.

Small work groups offer more learning opportunities to employees. At the same time however they demand more from people. Improvement of the quality of job, combined with a rise in level, can enlarge the risk of being replaced at one place and being put to work in another job of poor quality elsewhere. So it is important that not only learning possibilities at the job, but also learning abilities of employees have to be enlarged. Employees have to learn to participate in group processes (communicate. cooperation) and to recognize learning opportunities. Both are a necessary pre-condition for learning to take place (and also to do the job!). OJL is structured by the organization of labor, but also by guidance and support of the learning process by managers, trainers and colleagues. Learning and learning opportunities depend not only of the design of the job, but are also closely connected to changes in style of leadership and responsibilities, to the trajectory of change and more generally to skill formation processes in the company. The consequences of this for the integration of a welfare policy in the company policy as a whole are still not enough analyzed. In Germany, Sweden and the Netherlands models and experiences are found where employees are actively involved in innovation processes and redesign of work.

In many cases qualification processes are not central. A tension with formal qualification trajectories can be expected. Training by rotation or mutual support can be threatened by work pressure or personnel shortages. Attention should be paid more to the role of managers as 'facilitators' of learning processes. The same is true for the development of and instrumentation of the 'colleague as trainer'. In many cases learning and teaching of colleagues is at the same time expected and hardly recognized as a specific task. Facilities are lacking. Supervisors and management often still lack imagination for an integration of learning and working or feel threatened by a loss of control.

The small work group reinforces a tendency to de-individualization of labor relations, which includes job description and qualification demands on group level and a corresponding pay structure. Processes of social closure can occur in order to guarantee a homogeneous social structure and facilitate communication and consensus. Also groups can internalize control and discipline with regard to members which can exceed demands made by a manager, because of the lack of countervailing power.

Concluding Remarks

Actual results in terms of acquisition of skills and competence of job rotation and working/learning in the small work group are judged very differently. The quality of OJL depends on the sequence of problems and 'critical events' (Zarifian, 1991) occurring in day to day work practice. So differences in design and organizational choices in the same job and work process can have large consequences for learning opportunities. A development of higher skills is possible, when maintenance tasks or quality control are integrated in the job. In autonomous tasks groups workers are invited to more autonomy and to discuss

problems and improvements with designers and planners. But learning in the group can also be restricted, as in lean production concepts, to learning a series of low level short cycle tasks just by mere repetition. 'Continuous improvement' is restricted to details, leading to more efficiency and avoidance of unnecessary movements, in many cases leading to higher work pressure. In this case there is a broadening of the available range of low skills tasks, which enhances the flexibility of production and usability of labor power, but not the level of competence (and the market value !) of the employee.

Autonomous task groups can open up many learning possibilities. Multi-tasking, decision latitude and ample opportunities to work together and talk together about production problems enhance required skills as well as the learning potential of jobs. The organizational context must however develop and protect these. A very important problem can be the integration of OJL or continuous OJT in personnel- and allocation policies. The importance of personnel allocation policies in structuring learning opportunities at the job has been stressed. The optimal use of small work groups and multi-skilled jobs implies also job security, long term contracts for the core staff and clear career paths. Systems of job rotation are aiming at broadening of skills and the development of multi-usability. These systems should be connected to a career model, which opens up the opportunity to do more interesting and varied work, more responsibility and higher pay. This however can be contradicted by tendencies to make jobs more flexible, part-time and temporary.

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Neighbor-Teaching-Neighbor: A Case Study of the Reciprocal Relationship Between Work and the Worker

Diane B. Stoy
University of St. Thomas

Although community programs employ indigenous workers as peer teachers, little data exist on the reciprocal effects between this work role and the workers' identity, self-respect and perceived career path. With semi-structured interviews, this study of five black women working as peer teachers in their public housing communities illustrated that working in this new work role gave the women tangible skills, a positive identity and improved self-respect, although they remained uncertain about their career plans.

The qualitative dimensions of community-based health promotion programs that involve an interactive social process between the lay teacher and community residents have often been overlooked. These include the well-known reciprocal relationship between the worker and the job, and the empowering effects of full-time employment on previously unemployed workers from minority communities. Prior to this study, little information was available about the subjective experience of the African American women who underwent the transition from unemployed resident of a public housing community to the role of paid health counselor for their neighbors in a Washington, DC health promotion project. Little was known about their personal perspectives of their new work role; the impact of this work experience on their identity, professional growth and development; and their expectations for working in the future. Such data can have important implications for organizational models built upon neighbor-teaching-neighbor in minority communities.

Background

In minority communities in the US, early community organization models were sparked by the self-care, civil rights, and women's movements which, according to Bracht (1990), "demanded a transfer of authority and resources to people previously beholden to others" (p.37). The newer, more interactive models of community involvement were based on the models used successfully in rural communities by the Agency for International Development, the Peace Corps, the World Health Organization, and on Knowles' concepts of andragogy (1980). Knowles conceptualized communities as learning laboratories in which individuals learn to deal more effectively with their problems and communities, as organisms, learn to solve community-wide problems. "The key spirit of the whole enterprise is self-help" (Knowles, 1980, p. 150).

According to Bracht (1990), the prevailing trends in minority health programs acknowledge the fundamental premise that change in minority communities is most effective when the people it affected were involved in initiating and promoting it. This involvement included active participation in defining the problems, planning the steps to resolve the problems, and developing the type of structures that would maintain the desired changes (Green, 1986; Green & McAlister, 1984). The U.S. Department of Health and Human Services' report of the Secretary's Task Force on Black and Minority Health (1986) reiterated these points when it emphasized that "plans for intervention will be stronger and more effective if they are initiated by groups familiar with the community's culture, traditions, and language and that can mobilize local

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resources and networks for resolving particular health problems" (p. 283). The recommendations made in the Secretary's Task Force strongly emphasized the critical role of established community networks, organizations, and lay workers in planning community health programs, disseminating health information, and in stimulating behavioral changes that lead to a healthier lifestyle and a lower risk of chronic disease. The newer programs now operating in minority communities are based on the therapeutic helping model in which the peer counselors receive training and then encourage healthy behaviors among the people in their neighborhoods or natural social network. Adult peers and colleagues can thus help one another learn in an atmosphere where the identification between learners and their peer counselors provides support and motivation for learning.

According to Riessman (1965), there is long-standing evidence from clinical work, field studies, and experimental paradigms that this learning approach based on peer learning or colleagues teaching one another can be successful. This approach is based on research that dates back more than thirty years to the work of Arnhoff (1954); Cronbach (1960); Rioch et al (1963); and Rogers (1967). Rogers' classic descriptions of the helping relationship also revolved around the central theme of reciprocity. He said, "if I am to facilitate the personal growth of others in relation to me, then I must grow, and while this is often painful it is also enriching" (Rogers, 1962, p. 51). Rogers' simplistic concept of reciprocity in helping relationships is a contemporary extension of the concept of identity, which has its roots in symbolic interactionism (Bryson, 1945; Stryker & Statham, 1985).

Much contemporary research has been focused on the implications of symbolic interactionism in relation to work and its role in adult development. A large body of data (Kohn et al., 1983; Miller et al., 1979; Mc Call & Simmons, 1978; Rosenfeld, 1990; Stryker & Statham, 1985; Coles, 1976) suggests that the structure of work and social roles shape the self, particularly over the short-term; and features of the social, psychological self motivate people to certain types of work and work roles, especially over the long-term.

An extensive body of research by Kohn and Schooler (1973, 1982) also suggests that there are reciprocal effects between working and both intellectual flexibility and personality. In their 1978 longitudinal study of the reciprocal effects of complex work and intellectual flexibility, Kohn and Schooler found that over time, individuals' occupational conditions both affect and are affected by their psychological functioning in that work role. In their 1982 study of work and personality, they found that learning on the job also affected the workers' off-the-job realities. All three dimensions of personality used in their study--ideational flexibility, self-directness, and distress--affect job conditions, and all three dimensions affect one another as well. In the dynamic process of working, the worker's personality, as well as his cognitive ability, affects and is affected by his work role.

Generalizability of such results, however, is a major methodological problem with most research studies conducted on the reciprocal relationship between work and self. This limitation is a direct result of the homogeneity of the study samples, which are predominantly white, middle class men and women. Robert Coles' study on work and self-respect (1976), however, included both blue collar men and women, and Goodwin's 1972 study focused on work orientations of low income people. There are also reports from Brooks (1984), Davis (1983), and Gilkes (1980) that document the identities of black working women as community workers, church sisters and race women.

The nurturing and counseling by black women in their communities, and the counseling and teaching provided by the women who serve as health advocates in the Washington, DC, program take place within a context of a helping relationship similar to mentoring, which has its roots in Greek mythology (Bell, 1987, p.14). The work of Kram and Isabella (1985), who suggest that peer relationships at work have the potential to serve the same functions as mentors, is relevant to this study. Although the primary goal of the mentoring by the health advocates in the Washington, DC, program is the reduction of risk of chronic disease and not career development, the relationship between the health advocates and their neighbors relies heavily on the principles and processes of mentoring. The health advocates teach, encourage, support, and befriend their neighbors who are trying to make changes in their diet and other lifestyle habits. They serve as

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role models, advisors, trouble-shooters, caregivers and counselors in a manner that mirrors classic mentoring behavior in the workplace. In theory, they may achieve satisfaction and status as they begin this process of teaching and guiding, and their new role may influence their perceptions of their identity, their self respect, and their behavior.

This review of the literature suggests that the new work role called health advocate draws upon a solid theoretical base drawn from a variety of disciplines including social learning theory; andragogy; community empowerment; identity formation; symbolic interactionism; reciprocity; the essential conditions of helping relationships; mentoring; and the historical role of black women as change agents. This study is the first of its kind to use qualitative research methods as a means of making available the health advocates' experiences in their new work role and the meaning they attach to them. More than a record of those experiences--it is a study of neighbor-teaching-neighbor in public housing, that to paraphrase Denzin's (1989) words, opens the world of the health advocates for interpretation and understanding.

Methodology

The purpose of this study was to answer the question: what does it mean to be a health advocate? This qualitative study explored the experiential features of making the transition from unemployment to becoming a health advocate; perceptions of the new work role and its place in stimulating positive behavioral change within the community; and the impact of this work experience on the workers who were trained as the original health advocates in a health promotion project conducted in public housing communities in Washington, D.C.

The population for this study was a group of five African American women trained in the original group of health advocates and currently working in that capacity. After the participants signed a consent form, semi-structured, on-site interviews were conducted by the researcher. The interview questions were framed from a phenomenological perspective, and included but were not limited to areas such as employment and personal history; reasons for becoming a health advocate; descriptions of the work role; perceptions of personal change and learning; comparisons of expected versus actual change; and impact of the work role on future plans.

All interviews were transcribed personally by the researcher as a means of assuring a high degree of quality control and as a mode for initial review of the interview data. The researcher developed the coding system for the data, which was then sorted with WORD CRUNCHER, a text analysis software package.

Results

The subjects, age 20-61 years, were found to have common characteristics. All were black women who had lived in public housing, had been on public assistance at some time of their lives, and who reported a long history of informally helping others. The women volunteered for the new job of health advocate because it provided employment as a paid helper in their own community.

The interviews revealed the dynamics of the workers' helping roles that included being accessible in the community; providing health information; advocating for the residents with the health care system; and providing social support. Building a trusting relationship between the health advocates and the residents of the community was the prelude to the program's success. The study thus confirmed Rogers work (1968) that showed attributes of the workers to be more important than knowledge. The health advocates' warmth, responsiveness, openness, and a non-judgmental attitude were found to be critical to this process of health promotion. The interviews also revealed that working as a health advocate had the following effects on the women's self-reported health behaviors, self-respect, identity and perceptions of future career development.

Perceptions of Job-related Change: Identity and Self-esteem

In addition to positive changes in self-reported health behaviors, the experience of working as a health advocate had powerful, positive, empowering effects on the women's self respect, self esteem and identity. First, the women expressed a sense of pride in being involved in one of the first resident-directed programs designed to bring badly needed health promotion services to under-served public housing communities. Second, they reported that this feeling of satisfaction was greatly enhanced by the fact that they were working to help their community and their people. Third, they reported great personal satisfaction in working in a job in which they knew on a daily basis that they were helping others to become healthier. They reported great satisfaction from being able to apply their natural "helping" abilities to building a trusting and supportive relationship with many of the residents. This was also reinforced by the appreciation and respect paid to them by many of the residents.

The women reported feeling more positively about themselves in terms of learning and mastery. They had been exposed to a very large amount of new, highly technical information in their training courses. They expressed a sense of satisfaction about mastering this information, passing the course, and now being able to teach the content areas to others in the community. They expressed pride that they not only passed the course, but had also had acquired and would continue to acquire tangible new skills.

The women reported positive changes in the way they viewed their own identity. Having a job called "health advocate" gave these women a positive work-related identity. This work identity was one that "people in the community looked up to," an affiliation with a program that was recognized as beneficial for the community, and an identity which was something of which they could be proud. The most powerful description of the work role "health advocate" was the following:

> If somebody asked me what kind of a job I have, I say "I'm a health advocate." They say "what is that?" I say that I'm like Superman. You know Superman is not going to let you run in front of the bus and get hit! And that's like me, if I see you doin somethin that I know is not good for you, I'm not goin to let you continue doin it. I'm goin to come over there and tell you about it, talk to you about it.

The women reported positive feelings when they were asked about the nature of their jobs, and when their efforts were acknowledged by the residents. This included the first occasions when the residents began turning to them for assistance, and then later when the residents recognized them, called them by their names, and then returned to the health corner for more assistance and to say thank-you for helping them. The women also received positive feedback on their new work identity from their extended families and friends. They were not only acknowledged for having a job, but also for having a job that helped their communities.

Perceptions of Change: Financial Independence

Only one woman specifically mentioned the financial benefit from working. This woman, who was the only subject who had never worked previously, mentioned positive effects on her self esteem and respect from the financial benefits of the job. To this woman, a very important impact of her new job was her new self-respect and financial independence.

She said:

> I feel real good about myself. I feel good about myself when I get up in the morning. I say thank you that I got the job. And sometimes it feels so good that I just can't explain it. It feels good to be independent. I don't have to depend on a check every month. I never had a bank account and I got one now.

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Future Plans for Professional Development

Despite the fact that their new work role had given them a new work-related identity, the women did not report any decisive plans for continuing professional development. Two women in the study are no longer working as health advocates. The health advocate who had hoped to attend nursing school has not done so. The two remaining health advocates appeared to be content with their current positions, and attributed their longevity in their positions (of more than three years) to their natural patience, their helping natures and their determination to succeed in their new work roles. They planned to continue their work as health advocates as they keep "learning more on the job."

Conclusions

The findings suggest that the neighbor-teaching-neighbor model of health promotion is a helping process that revolves around building trust. The study also confirmed that the women who worked successfully in the new work role made positive changes in their health behaviors and felt personally empowered by the experience of working as health advocates. They did not, however, perceive a clear career path and felt uncertain about their future.

Implications for HRD Practice

This study was the first qualitative study of a new work role in health education programs based in American public housing communities: the health advocate. The data from this study provided previously unavailable insights into the subjective experience of black women who have assumed this new work role, a role that is being replicated in health education programs in public housing communities throughout the US.

Accessing and understanding the subjective experience of an individual working in a new work role has implications for HRD practice. First, although the collection of quantitative outcome data makes an important contribution to program evaluation, such data cannot capture the experiential features of the work role and the meaning of the social processes that take place during community based health promotion programs. In this study, the subjective perceptions of the health advocates confirmed that employment as a lay teachers was as empowering at it was originally conceived. In HRD practice, interviews with workers can provide important qualitative information about worker's perceptions of adult learning and empowerment in the workplace.

Second, the findings of this study have important ramifications for the recruitment and training of future health advocates who will be placed in similar roles in other public housing communities, and for integration of the program into the routine life within the community. Such data can then be applied to the recruitment and training of workers who are working in newly created work roles, and to further refinement of the work role.

Third, this research provided community health planners and the White House Inter-Agency Task Force on Health Care Reform with data on the viability and dynamics of a new work role that has enormous potential for success in minority communities. Since the research was conducted in an all-black public housing community, the findings are not generalizable to other minority groups. Given the intersection of culture and human resource planning, more research must be conducted with similar workers from Native American, Hispanic and Asian communities. Such investigations would provide critical cross-cultural comparisons of the dynamics of this new work role.

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The "Outcomes" Challenge: An Action Learning/Critical Thinking Approach to Program Development and Evaluation

Susan Damme
University of Minnesota

Rod Hamer
University of Minnesota

The Minnesota Extension Service (MES), like other publicly funded organizations, continually needs to examine its ability to plan for, evaluate, and report its outcomes. This report describes an action learning/critical thinking approach to the redesign of organizational work around program outcomes that combines practice, reflection, and the development of new theory.

The Minnesota Extension Service is an outreach function of the University of Minnesota with the following mission:

> To involve people in improving the quality of life and enhancing the economy and the environment through education, applied research, and the resources of the University of Minnesota.

The issues facing citizens are increasingly complex, requiring higher level thinking skills, and an accountability system that includes an assessment of what was learned in the process of doing the work. The question is shifting from "what is it you have done?" to "what has happened because you have done this work?" Those who require this answer include:

- Government Performance and Results Act at the federal level;
- The performance benchmarks in the University's strategy plan where the state legislature has tied funding to performance; and
- County boards of commissioners asking for reports to show documented outcomes for the work of MES.

The political environment and desire to fulfill the mission required MES to develop a new approach to planning, evaluating, and reporting its programs.

Conceptual Frameworks

In many areas of its operations, MES is developing a more holographic approach to its functions of program development, organization development, and staff development. In contrast, a more traditional approach to the "outcomes problem" would have taken the form of a group of subject matter experts revising the system, developing the material to be taught, and delivering training to the appropriate employees. In the holographic approach, the development of the staff, the organization, and the program planning process become so intertwined that the three processes are frequently indistinguishable from each other. Based on the conceptual frameworks of critical thinking, action science, and systems theory, this project demonstrates the results of a group of employees across all organizational functions connecting theory to practice in an evolving cycle.

Critical Thinking. Richard Paul (1995), from the *Foundation of Critical Thinking*, states that "thinking is integral to the nature of content and...it is thinking that gives life to content. He describes the process of critical thinking:

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> Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on the universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision,, consistency, relevance, sound evidence, good reason, depth, breadth, and fairness. It entails the examination of those structures or elements of thought assumptions, concepts, empirical grounding: leading to conclusions, implications and consequences, objections from alternative viewpoints, and frame of reference. Critical thinking - in being responsive to variable subject matter, issues, and purposes - is incorporated in a family of interwoven modes of thinking, among them: scientific thinking, mathematical thinking, historical thinking, economical thinking, moral thinking and yes, even outcomes thinking.

Stephen Brookfield (1987) adds, "Being a critical thinker involves more than cognitive activities such as logical reasoning or scrutinizing argument for assertions unsupported by empirical evidence. Thinking critically involves our recognizing the assumptions that underlie our beliefs and behaviors. It means we can give justifications for our ideas and actions." This is why it is important that an organization like the Minnesota Extension Service has a shared and stated mission, vision and even leadership values. This is a way to frame the work of an organization where employees, participants and funders can use critical thinking skills in choosing the direction of the work.

Brookfield also says "Critical thinking is a lived activity, not an abstract academic pastime." The structure used to provide support in doing program development, evaluating, and reporting needs to incorporate ways to think critically into its processes. This reflection needs to be a learned behavior that becomes part of the daily routine of the organization's life.

Action Learning. Thinking about thinking is closely tied to the second framework, action learning. Grounded in the action science theory of Chris Argyris and Donald Schon (1978), action learning guided the process, with critical reflection as an essential component of learning and organizational change. With its roots in action research, the goals of such a process are threefold: (a) to improve a practice; (b) to improve the understanding of the practice; and (c) to build an understanding and responsiveness in the organization to support change of the practice.

Argyris and Schon stress the importance of identifying the underlying assumptions and values (theories-in-use) that drive the practice that is to be learned about and changed. Without this understanding, new practices are not likely to be incorporated beyond a superficial level. Critical thinking and reflection processes guided the discovery of assumptions.

Systems Theory. Gareth Morgan's work with single and double loop learning and the application of systems theory to holographic organizational design also informed the staff development/organization development process. The example of a thermostat is often used to explain the workings of a simple system (See Figure 1).

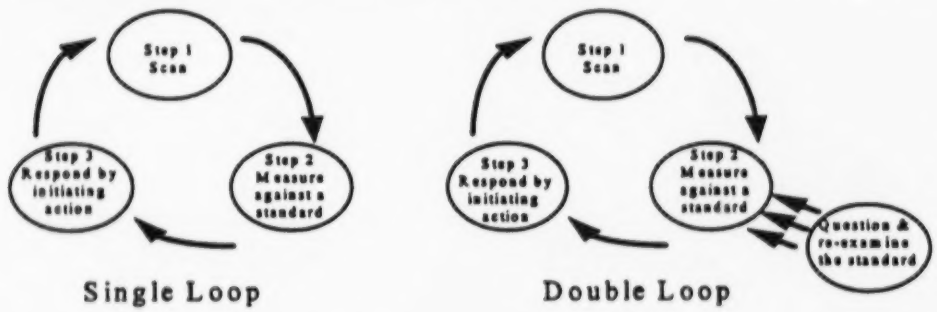

Figure 1

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A thermostat has three operations: to scan the environment, to compare the results of the scan against a predetermined standard, and to adjust a furnace or air conditioner in response to the second step. Translated to a learning framework, content is taught, the outcomes and standards for learning are preset, and the learning is measured against these standards.

The second, or double, loop is a modification of step two of this process. Instead of simply comparing results against a preset standard, that standard is continually examined against ever-changing contextual conditions. In the thermostat example, the energy crisis of the 1970's necessitated questioning of the 72 degree norm for air temperature. Government research centers, organizations, and families did their own formal and informal research into what temperature made sense for each setting. In a learning framework, the double loop process involves continual re-examination by all stakeholders of the outcomes and the process of the learning. This examination is done by allowing for and inviting environmental factors into the process, in the context of an action/reflection cycle where new knowledge evolves through critical reflection on action.

Research Questions

The process was designed with the following questions:

1. Can an action learning/critical thinking approach to learning result in
   (a) a more effective means of program development,
   (b) a more realistic and useful system of evaluation and reporting, and
   (c) an organizational shift that will support the new process?

2. Is there a more effective way of conceptualizing and operationalizing outcomes work?

3. Will this learning approach be generalized to other content areas and organizational change processes as a result of participating in the "outcomes" application?

The background and impetus behind each of these questions illustrates the need to move to a more integrated approach to the program, organizational, and staff development functions in the organization.

More Effective Means of Program Development. Historically, Minnesota Extension Service had a mission that related to information dissemination or technology transfer. The current mission, as stated earlier, is "to involve people in improving the quality of life and enhancing the economy and the environment through education, applied research, and the resources of the University of Minnesota." This statement implies work will be done around the critical issues that face the people of Minnesota - issues that are continuing to become more complex and multi-disciplinary. The program development process used in dissemination of information or technology transfer is not adequate when complex issues are the target of the work.

MES was "reinvented" in 1993 in order to be able to meet its mission of dealing with complex issues. The reinvention abolished long standing program areas which had difficulty dealing with interdisciplinary issues and were primarily housed in the colleges of Agriculture and Human Ecology. New relationships were formally developed with fourteen colleges or units within the University of Minnesota. Today these include: University of MN Duluth Campus, School of Public Health, the Humphrey Institute of Public Affairs, College of Education and Human Development, College of Veterinary Medicine, College of Architecture and Landscape Architecture, College of Human Ecology, College of Natural Resources, University of MN Morris Campus, University of MN Crookston, College of Agriculture, Food and Environmental Sciences, Continuing Education and Extension, School of Nursing, and Center for Urban and Regional Affairs. The breadth represented here signifies the added resources available for MES to deal with complex issues.

Ten areas of specialization were developed with membership from both campus and field faculty, most of the collegiate units, and all the counties participated. The specializations are: Livestock Systems, Horticulture, Crop Systems, Leadership and Citizenship Education, Community Resources, Financial and Business Management, Family Development, Child and

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Youth Development, and Nutrition Food and Health. These changes were necessary for MES to do its work as outlined in the mission statement. Former program development structures and support were gone and new forms were needed to help plan around issues. New structure, complex issues, new partners all led to the need to explore learning that could support doing the work under the current mission.

A More Realistic and Useful System of Evaluation and Reporting. The types of requests for reporting results to funders and other partners have also been changing over recent times. A system used by the federal partner in the USDA was called "MEMIS," a day-by-day accounting for time and contacts. The other major way of reporting was the "annual report" - giving specific details accounting for time and activities. It became apparent that both systems were no longer meeting the needs or were often shelved and never again looked at. In recent years, both systems were abandoned and no formal system was implemented in their place. Employees were relieved that long hours of documentation work which had questionable use and accuracy were eliminated. A more ad-hoc approach to reporting and evaluation began to emerge around needs, which included: the promotion process, annual performance review, grants and other funding reports, annual reports to funding partners as well as many others.

The ad-hoc approach also focused on details of accounting for time and activities. Issue based programming, in contrast to programs that centered around technology transfer, required a different supporting system. Accounting for time and activities seemed to leave out something significant that was happening in the work. The need to report on progress on complex issues led us to our work in outcomes. At the same time we were looking for help in program development, we began to learn the value of looking to the concept of outcomes in reporting and planning. Funders were also beginning to ask the question, "What happened as a result of our funding your work?" The training for faculty in outcomes was designed to ask the question, how can we learn to report our efforts in ways funders and others can get the information they need?

An Organizational Shift to Support the New Process. Without organizational support, the learning and program planning changes would not be institutionalized in the system. The question this process addressed was, "Would the participants who were selected for their informal leadership status and represented all areas of the organization, be able to implement organizational change as a result of their learning?"

Conceptualizing and Operationalizing Outcomes Work. Parallel to the concept of single loop and double loop approaches to learning, the group came to view the concept of outcomes from single and double loop perspectives. The traditional view of identifying outcomes, working toward them, evaluating progress, and basing future funding on this evaluation were seen as a single loop system. Compliance based evaluation fits the single loop model, measuring progress against the preset standards, or outcomes, without reflection on learning that has occurred in the process or inviting new environmental input into the process.

Generalization of the Learning Approach. The action learning approach relies on participants and organizational members being able to continue to facilitate learning on an ad hoc basis in their own work settings. In contrast to learning and applying new expertise, the learning process itself was a critical piece to the continuation of the work. Will participants be able to facilitate this type of learnings not only in relation to program planning, but to other content areas and processes as well?

Methodology

The process followed an action learning design in which participants together built an understanding of the problem, sought resources and solutions, critically applied new approaches, and analyzed the results. Participants consisted of a group of 35 organization members, either self-selected or nominated, who represented all functional subsets of the organizational structure. These functions included Extension Educators located in counties in the state, campus-based faculty located in some of the 14 colleges and campuses of the University, program managers, support staff, and administration.

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The group met four times for a total of ten days during a nine-month period. After an initial orientation to the action learning process, members of the group designed the learning sessions, which included introduction of existing knowledge and understanding, information from outside "experts," reflection on application, and the gradual generation and refinement of new knowledge and practices. Figure 2 illustrates the theory to practice cycle.

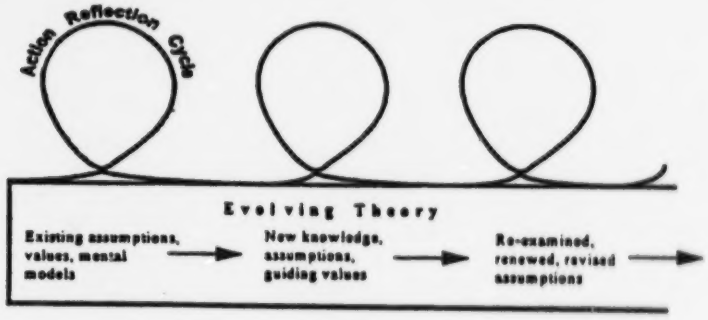

Figure 2

Two interrelated needs drove the methodology: the specific focus was to create a more effective system of program development and outcomes evaluation and reporting. A second intent was to integrate an approach to learning and working into the everyday functioning of the organization. This second intent led to the need to incorporate a triple loop in the methodology that centered around the learning process itself. Participants took on the role of consultants who would "infiltrate" the learnings throughout the organization rather than disseminate information in a more traditional stand-up training approach. They were oriented to consulting, and reflection on this role at each session provided a means to develop effective methods to transfer the learnings.

Evaluation of the results of this work took several forms. The program development processes were evaluated by audiences, stakeholders, constituents, funders, and participants. Evaluation was an ongoing process built into the learning design; content, structure, and processes were re-designed based on results along the way. The learning process itself was evaluated by participants. Many applied the process to other groups and settings and brought results back to add to the learning of the group.

Results and Conclusions

1.a. *More Effective Means of Program Development.* A new framework has been articulated as a way to put program development into a useful way of thinking that can result in high quality programs that help MES achieve its mission. The MES Planning Framework has eight parts:

- MES Mission Statement
- MES Vision Statement
- Principles of Program Development
- Principles for Action Plans for Outcomes (APO)
- MES Outcome Goals
- Action Plan for Outcomes Format
- Progress Report for Outcomes Format (PRO)
- Professional Plan Format.

The planning framework gives us parameters to guide our work, articulate and contextualize different processes for the work, and provides structures needed for the work to happen. The professional plan helps people form an individual identity in relation to complex work processes that focus on teams.

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The process of asking the questions that are outlined in the research questions section led to a programming conference held in May, 1995. Program leadership from all parts of MES and the affiliated units came together to articulate the types of changes needed to the program development process which led to both the programming principles and principles for the action plan for outcomes. Many individuals and groups had input into the principles.

A committee was formed to take the data collected and implement a new process to replace the old Plan of Work (POW) process. This committee, which was comprised of cluster (multi-county) program leaders and outcome consultants, gathered additional information from the users. In addition to the development of the principles, the committee developed the APO and PRO format and the concept of MES Outcome Goals. The five MES outcome goals were developed in September 1995 by representatives of MES program leadership and outcome consultants with input from across the organization. The outcome goals are as follows:

- Business and groups will revitalize and connect communities through effective management or resources
- Consumers, producers, and industry will improve health, reduce risk and increase economic viability
- State residents will sustain the environment while allowing for agricultural production and land use.
- Families and individuals will develop skills to be strong and resilient
- Citizens/Leaders will build safe, viable commmunities.

An electronic mail system was programmed with the goals of being easy-to-use and accessible. The program was installed as of November 27, 1995. Both the APO's and PRO's are available by MES Outcome Goal on either MES Gopher or the World Wide Web by accessing MES's Home Page.

1.b. ***A More Realistic and Useful System of Evaluation and Reporting.*** The outcomes consultants have been experimenting with ways to share outcomes with relevant people. These efforts have resulted in many reporting pieces that have been valuable and well received by the targeted audience. A problem still exists however, of inadequate communication across the MES organization, resulting in incomplete, disconnected and underutilized reporting efforts. preparing reports on a specific project for different audiences.

To address these needs, the Program Report on Outcomes (PRO) was developed. The PRO is a companion form to the APO which can be entered into the e-mail system. It reports outcomes in a format similar to the APO. These two forms are independent, so reporting can be done at any time and on any effort and is not limited only to results of a formal planning process. This format allows for results to be reported as they occur, and not just at a specific ending point.

In the past, access to data from a project has been held by the person collecting the information. Sharing of the information became the collector's best guess. The PRO system allows access by anyone on the MES Gopher internal home page on the World Wide Webb. The operational use of this process is that when someone needs data on a specific project, they can ask everyone who is doing the work to send in an updated PRO. Information gathered by this system must be considered data. The individual then will prepare the specific document that is needed for that particular audience. Training will be needed on how best to assemble a valuable reporting document from the data collected in the PRO.

1.c. ***An Organizational Shift to Support the New Process.*** The changes that occurred in the reinvention process eliminated many existing structures. The new structures and the ad hoc efforts offered few concrete processes in their place. Problems around communications and difficulties with multi-disciplined expertise led to an articulated need to have more formalized structures communicated broadly in the organization. The programming framework in the APOs now provides this structure.

The concern that structures become barriers instead of support for the work caused a need for the use of concepts of critical thinking and action learning. MES is providing training and experiences in both critical thinking and action learning, so faculty will be able to formulate the

appropriate structures to do the work. This has resulted in a large number of processes that assist in the planning, that share core philosophies, and are often customized to the needs for that program.

2. ***Conceptualizing and Operationalizing Outcomes Work.*** Is there a more effective way of conceptualizing and operationalizing outcomes? The word outcome has created confusion and a sense of "highest importance". The outcome consultant team gave definition to four terms for MES that became the foundation for the APO and the PRO. The terms are:

- Inputs: resources used in a program. Inputs include financial resources and the expertise used in conducting a program.
- Outputs: Activities or actions taken by MES to accomplish a program, i.e., meetings, learning conferences, newsletters, etc.
- Impacts: Changes that happen to individuals as a result of program participation, i.e., knowledge gained, attitudes changed.
- Outcomes: How the larger community has changed. An outcome occurs when changes happen to a community.

Dick Krueger, an evaluation specialist with MES, provides an example that clarifies these definitions:

- Input: More money for crime
- Output: More police cars and increased patrolling of neighborhoods
- Impact: More arrests
- Outcomes: An overall reduction in crime rate and an increased perception of safety.

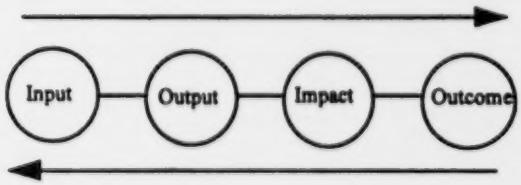

Figure 3

Figure 3 represents an order of thinking in planning programs. Left to right is typical in the technology transfer approach: you first gather the resources, plan the activities, measure the impacts, and ignore the outcomes. The new approach takes the opposite direction, right to left by first asking what community changes are being sought. It proceeds with asking how individuals in the community will change, what educational activities are needed for the changes to occur, and finally, what resources are needed to do this work.

The new outcome theory that evolved also assumed that outcomes could and would continually change. Reliance on expanding networks inside and outside of the system, reflections on learning as the programs progress, and the unknowns that result from letting go of control and empowering program participants all suggest that specific outcomes cannot be predetermined. Measuring progress becomes a learning event for everyone involved rather than a compliance exercise. Building relationships, encouraging participation and ownership, and educating and learning from collaborators becomes as important in program planning as anticipating outcomes.

3. ***Generalization of the Learning Approach.*** Participants are able to design and apply similar learning approaches to other organizational issues, including program planning. In the final meeting, learning about the learning took the form of generating the knowledge the group had discovered and created about learning in general. Some of the key points were:

- people outside the system should be involved early on in learning and planning processes
- experiences cannot always be passed on; people may need to go through their own experience in order to learn
- an energy is generated when people are more involved in the learning process - new learnings are discovered that cannot be anticipated
- learning was multiplied by taking the time to practice, reflect, practice again, reflect again
- this kind of learning takes time
- ownership in learning results when participants are part of the leading, planning and teaching.

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